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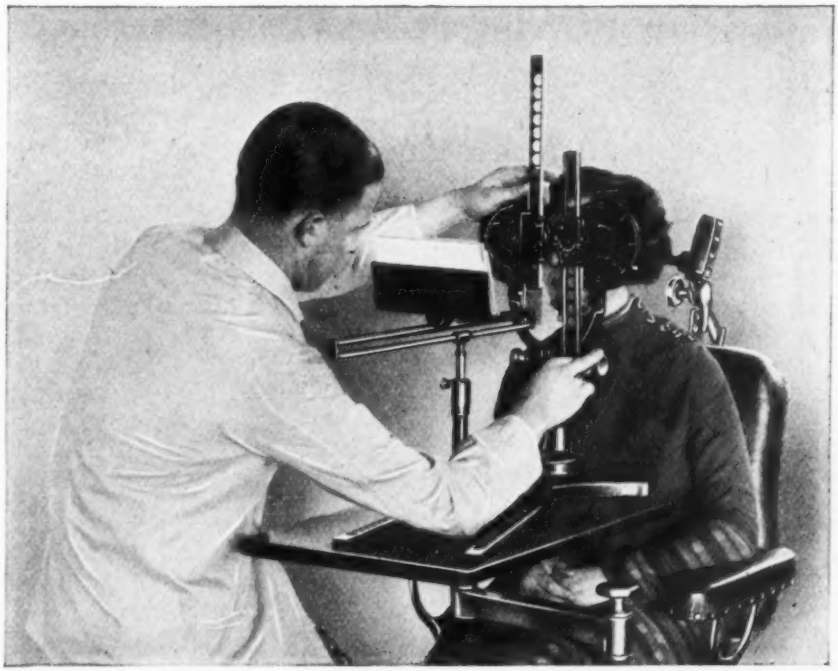

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Say: I saw it in the American Journal of Optometry

AMERICAN JOURNAL OF OPTOMETRY
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A CASE OF POST-OPERATIVE EXOTROPIA

W. S. Farmer, Opt. D.

Oklahoma City, Oklahoma

Patient, Miss G., Age 23, came in for an examination of her eyes, especially the right one. She complained of frontal and temporal headache, and wanted to know just what she could expect in the way of a correction which would give her some comfort. She explained that she was operated on for "crossed eyes" at the age of 12. Since this operation her right eye has turned out.

Her uncorrected vision was O.D. 20/40 O.S. 20/30 plus. The ophthalmometer showed a quarter of a dioptre of astigmatism with the rule. The ophthalmoscope showed the fundi, the lens and the media to be clear and normal. Skiametry static findings were, O.D. + 1.50 D. Sph. () + 0.50 D. Cyl. axis 180. O.S. + 2.00 D. Sph. () + 0.50 D. Cyl. axis 180. The dynamic findings were O.D. + 3.00 D. Sph. () + 0.50 D. Cyl. axis 180. O.S. + 2.50 D. Sph. () + 0.50 Cyl. axis 180. Subjectively with the trial case little could be done. With a pair of — 0.50 D. Cyl. axis 90 in place before each eye, it seemed to make little difference what was added. Lenses from a — 1.00 D. Sph. to a + 2.75 D. Sph. could be added, all giving about 20/30

PLATE I

PLATE II

vision.

The phoria tests showed approximately 48 prism degrees of exotropia at twenty feet, and about 58 degrees of exotropia at 14 inches. Fusion was not possible at any distance at the first visit, although at the time the above phoria test was made the patient could with the aid of the amblyoscope fuse two of the larger, simpler pictures faintly. The accommodative tests showed from 4 to 7 dioptres.

Upon charting the patient's field for the right eye we found the blind spot oblong and somewhat enlarged. Field

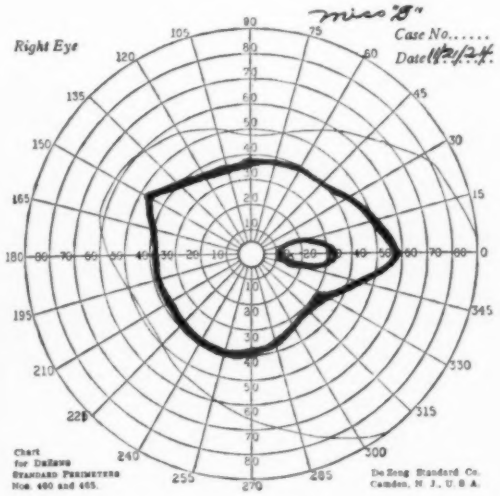

PLATE III

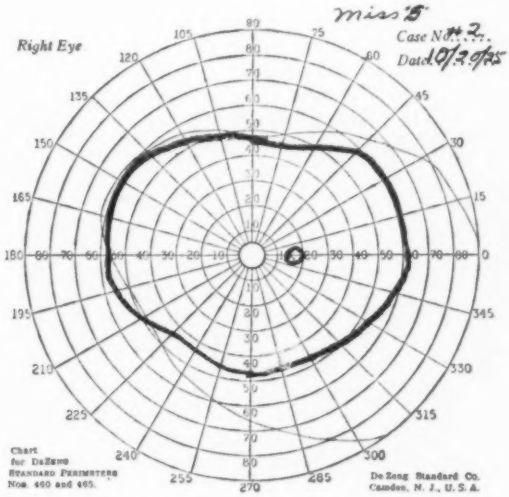

PLATE IV

for white reduced especially in lower nasal region. Contracted to 35 degrees out, 55 degrees in, 36 degrees up, and 38 degrees down. This field later increased or became sensitive to light over a much larger area, or 55 degrees out, 62 degrees in, 45 degrees up, and 48 degrees down; as is shown by the charts reprinted herewith.

Her former glasses, prescribed by an ophthalmologist, were O.D. + 3.25 D. Sph. ( ) + 1.00 D. Cyl. axis 180. O.S. + 3.25 D. Sph. ( ) + 0.50 D. Cyl. axis 180. This was changed by the writer to O.D. + 1.50 D. Sph. ( ) +0.50 D. Cyl. axis 180. O.S. + 1.00 D. Sph. ( ) + 0.50 D. Cyl. axis 180. These were given her, but with no promises as we explained to her that in all probability the internal rectus of the right eye had been severed, and chances for success in straightening the right eye were few.

Patient returned some months later, and requested that we begin treating the right eye, with the view of straightening it, as she felt it much improved, and headaches had subsided. At this time with 46 degrees prism base in, objects were fused at 20 ft., but could only be held a very short while. Then we went to work on adduction and fusion, using the amblyoscope, stereoscope, kratometer, phoropter, both the jump and rhythmic systems of exercises, but progress was slow.

Remembering the great variety of both minus and plus lenses, that gave near normal vision, we decided to try to stimulate convergence through accommodation, and prescribed for temporary wear minus 3.00 sphere O.U. At this time objects were fused at 20 ft. with 24 to 28 prism degrees base In.

Exercises were continued and instructions were given to wear the minus lenses at certain periods daily. Patient returned in one week, and we were somewhat agreeably surprised to find that she could fuse objects at all distances from 13 in. to 20 ft. with the minus lenses, and could fuse at 20 ft. without the glasses for a few minutes only. Patient stated that minus lenses had not seemed to tire eyes as she had expected. About this time she spoke of a seeming enlargement in the region of the right internal rectus muscle. Treatments were continued for some time, and about a year after her first visit to my office a complete examina-

tion revealed the following:

Subjectively, with a — 1.00 D. Sph. () — 0.50 D. Cyl. axis 90 before the right eye, she had an acuity of vision of 20/20, and with a — 2.00 D. Sph. () — 0.50 D. Cyl. axis 90 before the left eye she was able to get 20/20 vision here also. With this correction in place she showed 8 degrees of exophoria at twenty feet, and 21 degrees of exophoria at fourteen inches. She had 22 prism dioptres of adduction and 36 prism dioptres of abduction at twenty feet, and 17 prism dioptres of abduction, with 42 prism dioptres of abduction at the fourteen-inch distance. She could binocularly fuse on any object, at any distance, and used her correction only part of the time. We are continuing the treatments, building up the innervation for the internal recti, and hope to give this patient at least 50 prism dioptres of adduction before we finish.

Plate number one shows patient at start of treatment. Plate number two was taken one year later. Plate number three shows patient's external limits of form field as taken with Perimeter on the 21st day of November, 1924. Plate number four shows the same field but greatly enlarged, taken on the 20th of October, 1925.

Conclusion: While this case is still under our care, and following instructions closely, it is enough in this one instance at least, to cause us, as Optometrists to be very careful about discouraging even postoperative cases, as to probable correction and certainly we should make few glowing promises unless we are certain that we can make good.

The facts in this case seem to be that when the tenotomy was performed, that it was only partial and did not completely sever the tendon, leaving enough muscle tissue to carry the nervous impulse forward, but not enough to hold the eye in line, with its fellow. Fusion and accommodation being strong and active these agents were utilized to accomplish our purpose.

RESULTS ATTAINED WITH THE PRISMATIC CORRECTION OF SMALL AMOUNT OF EXOPHORIA

H. P. Blaine, Opt. D.
Norfolk, Nebraska

Mrs. C. Age 25. For the last five years Mrs. C. has been traveling with her husband, who is a traveling evangelist. She has always been troubled with headache, and has been during this time, she says, to over two hundred physicians for treatment, and not one physician ever suggested that her trouble might be because of visual fatigue.

Her sister, living in Norfolk, having been successfully fitted a few months previous, brought this patient in for an examination.

The results were as follows: O. U. 20-20 in either eye. Slightly blurred binocularly, 0.50 D. astigma in each eye, with the rule. Static retinoscope, neutral—no lens indicated at all. Dynamic retinoscope, plus 1.25 O. U. Sph. No hyperphoria. 2 D. of exophoria at 20 feet. 3 D. of accommodative exophoria at near point. Abduction 8 D., and adduction 28 D. Subjective test, refused any lens at all on either eye monocularly, although binocularly a —0.25 D. Sph., cleared the chart somewhat.

A 1 degree Plano prism base In was prescribed, which cleared the chart, and a second 1 degree Plano prism base In on the other eye improved it still further. This was used as her final prescription and she has not had another headache since. Thus the simple correction of this exophoria proved tremendously effective.

THREE TYPES OF CONVERGENCE AND ACCOMMODATIVE DEFECTS

E. Markhus, Opt. D.
Minneapolis, Minn.

We are here dealing with two activities of the eyes, which by the very nature of their use function simultaneously and in co-ordination with each other. The retinae of a pair of eyes are the two receptive screens upon which the ocular pictures are thrown. Accommodation maintains these pictures sharp, distinct and well defined. Convergence places each retina so that their respective pictures fall on corresponding points. When the eyes are functioning properly, the amount of accommodation brought into play is accompanied by a corresponding amount of convergence. When the fixation distance is changed, the accommodative and convergence values are correspondingly varied together.

Governing these two intimately related functions is a well adapted feature of control: the third nerve. This nerve causes the contraction of the ciliary muscle in accommodation and determines its amount. It also causes the innervation of the internal recti muscles, thus causing convergence. These two muscles being energized by the same nerve, any stimulus sent one will affect the other.

But though this is the ideal condition it is not universal. This lack of harmony between these two functions is an important problem of optometric practice. Personally I subdivide this condition into three classes:

1. Those caused by the excessive or insufficient innervation of both ciliary and recti muscles.
2. Those caused by the anatomical deficiency of the recti alone.
3. Those caused by either excessive or insufficient innervation of the internal recti alone.

The first type is most always accompanied by errors of refraction and optical correction of the defective focus usually restores the muscle balance. Hyperopic cases have undue ciliary contraction and a corresponding overactivity of the converging muscles. Correction of the hyperopia relieves the third nerve and its branch going to the interni, subsiding both the accommodation and convergence.

As myopia calls for little ciliary activity we are likely to find a condition of exophoria associated with it. Inversely correction of the myopia encourages ciliary activity, hence convergence, thus bringing about a condition of equilibrium.

The second class comprising cases where there is an actual weakness of the interni is best handled by means of prismatic exercises. Correcting prisms to be worn base in should be prescribed only as a last resort.

The third class of cases where the interni only are over- or under-stimulated is sometimes difficult to deal with, especially if the case is one of over-stimulation. A correction of maximum plus or minimum minus may help, exercising of the external recti is recommended, but I have little or no success with it.

If the case is one of insufficient innervation, good results may be obtained by stimulating the third nerve with shocks by sudden application of prisms. In treating such a case I have the patient continually close and open his eyes with prisms base out in position before them. The kratometer is ideal for such a case. Slow, steady muscle pulls induced by gradually turning in rotary prisms are not effective, at least not in my experience. They do not seem to develop nerve force, nor increase muscular innervation.

AN OCULAR EXPERIMENT

F. McFadden, Opt. D., F. A. A. O.
Athol, Mass.

The January issue of the American Journal of Optometry seems to be a "Pinhole" issue. Dr. Pascal refers to a pinhole in a minus lens of high power which brought about some startling results. Nakajima makes some observations upon the use of the stenopaic hole. A pupilometer by Ferre & Rand is described. Dr. Peckham refers to the size of the pupil.

Here is something further with respect to stenopaic holes, and minute orifices. Is a stenopaic hole "plus" or "minus" in power, when held up and treated as we do a lens in neutralizing? Some say there is a **with** movement, others an **against** motion. Try it out on your own eyes. It certainly seems as though it had a "power" of some sort.

The answer is that this opening treated in the manner of a lens will actually measure the type of defect of the observer, and his error. As soon as he gets before his eye a lens which perfectly corrects his error the pinhole has no motion. This phenomenon is not only curious, as well as interesting, but is occasionally very useful.

Here is another. Take a piece of exceedingly thin sheet metal, brass being conveniently worked, but cardboard will do with extreme care. The brass should be about 5 or 6 one-thousandths (.005″) of an inch thick for satisfactory results. Take an exceedingly small cambric needle, and punch about three holes through the brass, seeing that the merest point of the needle pierces. These holes should not be more than .004″, .006″ and .008″ in diameter. Smooth off the protruding metal on a very fine oil stone. Wash absolutely clean. If the metal is exceedingly thin the actual orifice will be a "knife-edge," having no thickness of moment. If the metal is thick, or if a card is used, we have an internal reflection which will upset our observations, or the ragged fibre of a card will do the same. It pays to make up one of these discs for the refracting room, for it is exceedingly useful in many cases. If you do it at all, do it well, however. The next thing is a "snowball" electric globe. Hold the largest orifice close to your eye, and approach close to the globe. Many phenomena are observable, since this minute opening now becomes a virtual lens of great "depth of focus" as a photographer would say. You can observe the minute globules of oil come floating down your cornea, can perceive the streaks of tear-liquid, see opacities of your cornea, if there are any, but particularly can see minute particles of foreign matter on the cornea, and see them wash down by the action of your lid in winking.

There is also the "chagrin" (pronounced shag'ren) or grain of the lens capsule which is readily visible in many cases. If the lens has any tendency toward aging there will be a central nucleus which is considerably opaque. There are also to be seen the faint lines of the septae of the lens, somewhat irregular, but the whole six of them can be picked out. Then there are the entoptic images, floating bodies of the vitrious, sometimes looking like strings, other times like strings of beads. Also one can observe what appears to be floating corpuscles as though blown about by streams of air.

Look out for the eye-winkers, they loom up like rail fences. Do not expect to see all these phenomena at once. You are studying with an exceedingly powerful microscope, and it takes a long time to learn how to observe, to get the eye so it knows what to look for. Use various kinds of light, but see to it that it is powerful, very powerful. Even with the highest power one can obtain anywhere the actual candlepower which can enter the eye through a hole .005″ will be of the order of a bare thousandth, so there is no danger of blinding the eye.

A good background is the summer sky, observed by lying on one's back and gazing directly upward. Even the sun's disc will serve very well with these minute openings.

For every element of the eye lying anterior to the retina, this orifice, with good illumination and with different colors of illumination, beats any oph-

thalmoscope ever invented, or that can be made. No slit lamp can ever reveal the things you see through these orifices.

Those who have ever fooled with cameras will recall that a "pinhole" makes an exceedingly perfect lens, having absolute depth of focus, there being nothing in the near or far field which is out of focus. The lens of the camera simply does not exist when a pinhole is placed anywhere in the tube. Likewise in this experiment upon our eye, the powers of the cornea and lens are both nils since all rays are axial, and have no bending or convergence. The minute orifice therefore takes the entire place of these structures, focusing everything within its field.

A disadvantage is that one can observe no eye but his own. In certain types of incipient cataract of the nuclear order, however, it is sometimes possible to show a consultant the condition which is present, if we find it expedient.

The writer is willing to wager that there won't be a single reader of this article who will make up this little brass disc for his refracting room and try it out. The wager is a box of Vermont "rock-maple" sugar.

MAKING A TONICITY TEST

A Nordstrom, Opt. D.

Minneapolis, Minn.

There are several systems regularly employed by optometrists in making tonicity tests, or what are sometimes called the accommodative phoria tests.

One method has the patient fix a small light at six meters through a vertical displacing prism, one eye being covered with a colored, usually red, glass disc. The other method is to place the maddox rod before one eye and the colored disc before the other. It is important to have the testing unit level and well centered before the patient's eyes and the fixation point, too, must be exactly on the patient's eye level.

It is advisable to make the distant tonicity test before the refraction as well as to make it after, as in this way one can easily compare what the effect of correcting the ametropia will be on the balance of the extrinsic recti muscles.

Tonicity tests are made at both distance, that is, six meters, and at the patient's reading or working distance, the technique of both tests being the same. The reason for this being to determine the patient's normal muscle balance without and with the accommodation at work. It is of course necessary in both tests to eliminate the fusion sense.

In esophoria one will usually find a high adduction or a very low abduction, while in exophoria the reverse is usually true, the adduction being low and the abduction relatively high. Generally the horizontal phorias will indicate whether or not a stronger or a weaker correction is advisable.

In esophoria with hyperopia a latent error is suspected, hence a full or an over-correction should be prescribed. In exophoria with hyperopia it is well to under-correct and frequently advisable to suggest and prescribe treatments. Prisms will, as a rule, accomplish little in these cases. Esophoria with myopia on the other hand requires an under-correction, while in cases of exophoria with myopia one should prescribe the full correction. The vertical phorias are the cause of much asthenopia. When the refractionist uncovers a condition of this kind which will not be relieved by the correction of the patient's ametropia, it then becomes necessary to prescribe prisms to align the images. This should be done carefully, giving the patient the weakest possible prism to accomplish the desired results.

INVESTIGATIONS ON THE FOVEA AND ON THE ENTOPTIC METHOD OF OBSERVATION

By E. P. Fortin, M. D.

Translated from the French by
G. L. DuPlesses, Opt. D.

Entoptic phenomena must have for a long time back attracted the attention of investigators, either because they interfered with observation or as early symptoms of ocular affections. However, observations have been numerous, though the literature on this subject has always been indefinite. This may be due to the fact that these phenomena being subjective in nature and the reader being sometimes unable to reproduce them at will, he lost interest and failed to classify them. In spite of this disadvantage the entoptic method permits the solution of many problems and accurate diagnosis of certain pathologies.

Have you ever wondered why the eye does not see itself as it sees the exterior world. In order to make it distinguish its own elements, it is only necessary to direct it toward either an obscure or a luminous screen; but this screen must be free from any spot or mark susceptible to form an image as some detail would superimpose itself and blur the images sought. Further on in this paper we shall modify the conditions of the experiment by varying the illumination, compressing the eye or exposing it to an electrical current, and finally the instillation of various drugs. For twenty years, the author has sought to perfect an instrument (entoptoscope), which permits us to see in our own eyes, the corneal surface, the iris, crystalline and the elements of the vitreous body. By means of a shutter suppressing a filter the yellow spot is visible as an after image, and all the details of the capillary circulation are clearly seen. In the fixation area we can observe better than we can with the best microscope, the minute structure of the retina and in this lies the superiority of the entoptic method as a mode of observation.

We shall here briefly outline the three principal methods of entoptic observation. The first consists in directing the eye observed toward a dark area, then a concentrated beam of light is thrown on the sclerotic as far back of the pupil as possible. The second consists in looking at the sky through a stenopaic hole constantly in motion. This method improved by the use of the Cooper-Hewitt lamp yields remarkable results. The third being the one we shall elaborate upon was very simply described by Purkinje and Helmoltz: "The gaze is directed towards a dark background while a candle held below or beside the eye is moved back and forth" (Helmoltz). The results of this last method are proportionate to the obscurity of the background and to the intensity of the luminous source. Electricity has greatly improved the conditions of this experiment and with the use of a 200 c. p. lamp and a box lined with black velvet very good observations are possible. Other mechanical improvements are optional such as shielding the eye from transcleral illumination. When we make the lamp describe arcs of circles at the limits of the visual field, we should in half a minute or so, be able to see the larger vessels and the fovea clearly. The larger the vessels and the further they are the more will their entoptic image be displayed.

There is one phenomenon that I believe has not been described. As we move away from the dark screen the vessels become larger. Other entoptic images also appear to become larger under certain conditions. We have tried to color these vessels by means of colored lights without success, and we wonder if the retinal purple is a factor.

We have already observed that the displacement of the luminous source causes the displacement of the ves-

sels. This would prove that they are not on the same plane with the visual layer and that there is a parallax. We shall call this parallax positive when the shadow moves in the same direction as the light and negative when it moves in the opposite direction. Helmoltz justly remarks that if the luminous source is moved towards the point of fixation, the parallax is positive and that it is negative when the light describes an arc of a circle around this point.

What surprises us is that we observe capillary ramifications very near the center of the fovea, contrary to that found with all other methods of observation. At the exact center of fixation we can with a little attention observe a peculiar apparition which presents many problems that we shall try to solve. This is a "Zone chagrinnee" caused by the juxtaposition of scintillating luminous half circles. The lack of movement of this layer makes a sharp contrast with the displacement of the capillaries. Helmoltz could not very well observe this layer with his method due to the poor illumination.

Today it is generally admitted that the line of fixation passes through the center of the fovea, but if you require a demonstration I do not believe that any objective method can accurately supply it. Only the entoptic method can demonstrate definitely this physiological fact.

What now is the function of this chagrin surface? We have seen that this layer is stationary when the lamp is moved. If there is no more parallax, it is because the elements we are studying and their images are on the one and same plane. Here is the solution of a problem presented in the last centuries. At this retinal level the wave length, a physical phenomenon, is transformed into a sensation, a physiological phenomenon. The depth of the fovea is easily measured by the displacement of the capillaries. It is found to be quite deep. Do these bright dots at the center of the fovea correspond to known elements as cones, pigmentary cells, etc., or if their angular dimensions do not permit us their identification as such, do they correspond to a layer of unknown elements?

Besides the structures which we have just described, other observers have seen in the same region the zone which received the name of foveal mosaic. In order to see it the eye is directed to the sky from behind a slightly agitated stenopaic hole. In 1907 we have with mercury lamps, demonstrated this mosaic as an objective fact. This phenomenon appears clearer in the best preparation colored with methylene blue and we believe that if any lesion was present it would be noticed immediately.

It seems to the writer that a grave error has been made in studying central vision. It is admitted that the macular area of the retina is formed of a homogeneous zone of equal elements. These would be central cones, in fact atoms of visual sensibility. This physiological error is easy to trace (Helmoltz, page 293). In order that two stars produce two separated images they must each have their image on one of these elements but the two sensitive elements must be separated by a non-sensitive element; as the central cones measure four microns and as this corresponds to a visual angle at sixty seconds this was considered the limit of visual acuity. The only objection to this is that these figures are not exact as we shall prove. First there is a physiological error. It is false to assume that in the center of the eye there would be a small surface of homogeneous sensibility where the image would be formed. In the first place the eye is always in motion in performing the act of vision. What then does physiology reveal? Exactly the opposite. Javal insisted on the exiguity of fixation and on the incessant movements of the eye. Separate visual sensations would be dissociated only inasmuch as they would fall on two elements separated by a third element. This theory is justified for tactile sensations, but we believe that visual acuity results from a visual sensation, and fixation with the sensations of the eye muscles, as the eye in order to fix two points must be in motion. Would a retina contain but a single central cone its visual acuity could in theory still be normal as the blind man can differentiate with one stick, obstructions in close proximity. What most concerns the limits of visibility is the dissociation of two close objects. But we learn that it

is not their simultaneous, but their successive images that we are looking for. It is, therefore, important that for the smallest angular displacement of our line of fixation corresponds to the greatest displacement of the points fixed successively through the dioptric system. This is a practical application of our remarks towards the construction of optical instruments.

Another popular error is that the cone is the atom or limit of visual acuity. This is wrong. There are two classes of visual acuity, the first is that which sees the exterior world blurred by the defects of curvature of the crystalline and cornea, while the second is the more delicate internal acuity in other words the real visual acuity. The stereoscope has long demonstrated that the limit of external acuity is finer than sixty seconds (this corresponds to four microns or size of the cone), as to the true visual acuity, we do not hesitate to state that it is tenfold superior.

To explain this remarkable sensibility, we first ask ourselves this question: Are not the elements called central cones more elongated in the center than is generally supposed? Preparation seemed to prove this but in spite of this consolation, we believe that the cone is too large to be the limit element of our visual acuity. It must depend on finer elements probably those fibers named after Henle. Let us expose one of the reasons on which we base our theories: the blood globules measure seven microns and they can be seen entoptically in the form of circles in retinal regions remote enough from our point of fixation to contain only cones larger than five microns. Ordinary sense does not permit us to admit perception of a form other than by a perceiving unit smaller than the one seen. This reasoning caused many physiologists to declare a prior entoptic observation of the blood globules as impossible. It is true that their technic was poor; but with improved instrumentation all the details of circulation are clearly visible.

The retinal terminology in the admission of limiting membranes seems to make their roles similar. The internal membrane is first of all a means of separation, while the external enters directly into the functions of vision. We believe that during accommodation and fixation, displacements and alterations in size of the long central elements take place.

We insist on the remarkable disposition of Henle's fibers in the macula and surrounding area. We have noticed that these fibers have a diameter in the ordinate of those of light vibrations hence we suppose that they are vibrated by the latter.

We wish to call attention to Newton's insistence in developing an undulatory theory of vision, and we would like to reapproach his assumptions with our micro-photographs and entoptic observations.

However, many other observations are possible with the entoptic methods and these are susceptible to render great services to physiology and pathology. In describing some methods of entoptic observation, we offer the means of observing structures inaccessible to objective methods and hence open new fields of discussion and study, especially of the fovea.—(Dec., 1925, issue of Annales d'Oculistique.)

SUBJECTIVE ACCOMMODATIVE TESTS

J. E. Peterson, Opt. D.

Minneapolis, Minn.

Many authorities agree that the functions of ocular accommodation and convergence are so closely related that the slightest change in one affects the other, due to their associated activities, but the difference is not necessarily proportional. This is easily shown by making a subjective positive accommodative test. Here the convergence necessarily remains the same as the fixation point is constant, usually 33 cm. The patient being directed to hold at this distance a card upon which has been printed a few lines of agate or 5 or 6 point type. The examiner then places minus spheres before the

patient's eyes, increasing the amount of the spherical element until the patient is no longer able to determine the character of the reading matter. It is important that the card be held stationary at the 33 cm. distance. By using concave lenses in this manner the accommodation is forced and the reserve amount can be determined. The test can also be made with convex lenses, it then being called the subjective negative accommodative test, the technique being the same as before with the exception that convex lenses are interposed instead of concave. In this latter test the accommodation is suppressed.

It is not necessary to make both of these tests on every patient, but the first mentioned test, the subjective positive accommodative test, should be made on each and every case, as no patient should be discharged who cannot easily, through his or her reading correction and a pair of minus three or minus three and a half dioptre spheres, read the small type on a card at the 33 cm. distance. A patient who can accomplish this has a sufficient accommodative reserve to satisfactorily carry on near-point work, assuming the refractive error and the extrinsic muscle balance to be normal or corrected.

PRACTICAL NOTES AND CURRENT REFRACTIVE TOPICS

R. M. Peckham, Opt. D.,
Waterbury, Conn.

THE CROSS-CYLINDER CHECK TEST

No one has offered a better check against over or under spherical corrections than the cross-cylinder. But there are certain modifications to be made on the method as first presented, some twenty years or so ago.

The earlier proponents used exclusively a —0.50 D. Cyl. at right angles to a + 0.50 D. Cyl. It was usually made up, as a matter of economy, in sphero-cylindrical form, —0.50 D. Sph. practical and entirely right.

The cross-cylinder is placed in the trial frame over the lenses found by other tests, with the axis of the plus cylinder at 180. The patient is to look at a set of vertical and horizontal lines. If the horizontal lines are blacker than the vertical, more plus is to be added. Or if the vertical lines are blacker than the horizontal, plus is to be subtracted. We were directed to so change the lens power by the addition or subtraction of plus spheres that all the lines should be *equally black*.

But we find if we observe this instruction, that we do not avoid recorrections with any greater surety than by other checks. In examining this method more carefully, we find the weak point lies in these words "Equally black." For too many eyes, a change of considerable lens power can be made, and still the lines will be "Equally black." Again, with sectional accommodation, the suggesstion to see "Equally black" is quite sufficient to start the chain of reflexes that end in meridional contraction, and by this all lines are made to appear "Equally black."

The essential basis of the cross-cylinder test is that the images of the vertical and horizontal lines shall be practically equi-distant from the retina, the vertical in front, the horizontal behind. Then the retina is out of focus for both, and *equally* out of focus for both. In this position, both sets of lines should be equally blurred. And when we find this condition, both horizontal and vertical lines equally blurred, we shall find the test most delicately accurate.

In not over half the cases examined will we find that the 0.50 D. cross-cylinders will blur. And occasionally we run across an eye, or a pair of eyes, for which the 0.50 D. cross-cylinders make so much blur that the patient cannot surely say whether the

two sets are equal in appearance or otherwise.

To take a word from the photographer's vocabulary, there seems to be a variation in "Depth of Focus" in some eyes, just as there are such variations in camera lenses. But the cause of this variation does not seem attributable to similar principles in camera lenses and in eyes. Rather, I am inclined to surmise that the variation in "Depth of Focus" in eyes is due to varied arrangement of the visual "cells" in the retina.

Be that as it may, this difference exists, and since it exists we must prepare to prevent the defeat of our purpose, and further, use this phenomena to our own profit.

By providing cross-cylinders of different strengths, we arm ourselves against mischance. A set of four pairs of these sphero-cylinder compounds will care for most cases, but I have seen an occasional eye that required 1.50 D. cross-cylinders to effect a slight blur. In such rarities, the combination can be made up from the trial case. But for every day use, the following combinations will be found of genuine value:

No. 1. —0.25 D. Sph. () + 0.50 D. Cyl. Axis 180.

No. 2. —0.50 D. Sph. () + 1.00 D. Cyl. Axis 180.

No. 3. —0.75 D. Sph. () + 1.50 D. Cyl. Axis 180.

No. 4. —1.00 D. Sph. () + 2.00 D. Cyl. Axis 180.

That lens is used that gives a slight blur, and often each one of a pair of eyes requires a different cross-cylinder from its mate.

The essential of cross-cylinder checking is that all lines shall be slightly and equally blurred. We shall have to discard the "Equally black" formula of the earlier writers, and substitute the words **"Equally Blurred."**

THE EFFECT OF WEARING BADLY CENTERED LENSES

We have all had the exasperating experience of fitting a pair of glasses according to our very best ability, taking great precaution as to centering or decentering, getting the lenses at the correct distance from the cornea, giving them just the proper tilt, and so on, and a few days later seeing the patient walk in with the announcement that an old pair of dollar store glasses, or a pair evidently fitted by a careless optician, is a great deal better and much more comfortable.

And inspection shows that those cheap or poorly fitted glasses are either too wide or too narrow for the patient's interpupillary distance. He or she has been wearing an effective prism, either base in or base out, that afforded just that innervation or inhibition needed. But in our carefully fitted glasses that prism is lacking.

So we pass this suggestion along. That we shall take unusual pains, when we find a patient who has been wearing cheap or poorly fitted glasses, that we shall resort to every possible means and method, to determine what his or her binocular habits may be, and that we shall establish beyond doubt, whether those resultant prisms to which he is accustomed must be continued or may be discarded.

It is very annoying, to say the least, to have a "come-back" of this kind. But most of us have had them, and it was due to our carelessness in assuming too much. The wearer of ready made glasses is about the toughest type of case we get hold of, and, above all, we must not let him go about with the news that his dollar store glasses are better than ours.

SPECIAL REPORTS

AN EDUCATION WHICH WILL FIT YOU TO RENDER A SERVICE UNIQUE IN CHARACTER

The National Visual Survey and Service Corporation

The majority of men, professionally speaking, are making scarcely more than an existence. Hundreds are running behind. Is it because they are engaging in a work unworthy of any greater compensation? In almost any other vocation in life they would have been a failure long before this, if so little, in every way, had been put into the plowing, seeding and harvesting. Reaping bountifully means sowing and then cultivating vigorously. Luck doesn't fill our granaries. Study, perseverance, and deepseated ambition to accomplish, make always for success.

Men of vision will you kindly read this message and act favorably. For more than a quarter of a century, I have studied constantly, visual survey problems, your own problems and those whom you choose to serve. That which I am seeking to have you do is done with the same sincerity as a goodly parent endeavors to lead and assist his own beloved children. This work will bring you happiness because it brings success and happiness to those whom you serve,--and there are millions of them in education, industry, motordom, etc.

We need a unified system of education, practical in its application, such as Drs. Wall, Roberts, Glidden, Davies and others will bring to you. They are willing to work and serve you right in your own vicinity, your own home,—for how much?—a price less than many thousands of our boys and girls pay as tuition for one year's schooling in our leading universities and colleges. You ask the question, "What are some of the things I am to receive for my effort and my money?" First as a unit, we are educated to serve the needy ones,—and in other words as professional men all of you are working in the best possible way as a whole to do this visual survey work. Your instructions come from college trained men,—men of broad knowledge and practical experience. When you complete this course you are members of a select group. You are fitted to direct others as well as being able to do satisfactorily for yourself. You have been specially trained and will be so recognized by education, industry, motordom, state and national Government. You will be members charter, of a National Clinical Association, and in a position to receive many advanced ideas, suggestions, etc. Through my personal effort, by pen, lectures and other available means will the country know of your efforts, your accomplishments. Our monthly magazine "Modern Vision" will gradually but energetically convey to industry, education, auto associations in various states, etc., the type of service that is really efficient. When those of standing in various vocations of life ask for and demand the type of service which you will have and will be outlined in this magazine and before Civic Organizations, whom will they seek to do this work?

If you were in need of an operation upon your heart, or brain, would you call a chiropodist? I am asking the real leaders of the professions in Optometry and Ophthalmology to study this situation, endeavor to realize your opportunity for service, step forward now and become members of a class of one thousand (1,000) to prepare for this real task. You may reason, "I have sufficient knowledge and practical experience to do this work." Granted, but if a dozen of you were to undertake the work demanded there would, at least be eight or ten ways suggested for doing it. Consequence,—no success.

Unite your efforts under one right and efficient method and quickly, accurately and efficiently are the needy served,—and to the credit of the professions.

Gentlemen, I once again appeal for your co-operation! State Associations endorse this work! Enroll your members and mail in your list! Three states have already done so in the last thirty days. The address is 400-406 Ward Bldg., Rochester, New York.

F. P. Barr.

SIMPLIFIED BOOKKEEPING FOR OPTOMETRISTS

J. Fred Andreae, Opt. D.,
Baltimore, Md.

Knowing from experience how odious bookkeeping may be, I decided when I started to practice for myself that my set of books must be as simple as possible and yet as complete as necessary. After considerable experimental work I decided upon the system hereafter outlined as being the solution to my bookkeeping problems.

The physical equipment necessary to carry on this system is as follows: First, a register, preferably one which prints a ticket, or if this is not available a cash drawer and a set of printed tickets. Second: A memorandum book, or as I use an appointment book with full vertical columns for name, operation, debit and credit. Third: A numbered check book, and fourth a specially ruled ledger, with spaces provided for fees and material charged by patients. Daily receipts, bank deposits, and cash on hand. On the other side of the sheet will be found spaces for checks written, with proper entries in columns as follows: Cash, Material, Rent, Telephone, Light, Postage, Insurance, Labor and Sundries.

The system is kept in daily operation each portion of the work being easily and simply carried out. The first step is to mark on the register ticket or one of the printed slips the amount of money in the register or drawer. This is known as the Cash on Hand. Now as money is received a slip is placed in the drawer with the amount and patient's name upon it. Should money be taken from the drawer to be deposited in the bank, a similar slip is made out showing the amount followed by the word, Deposit. The same procedure is followed when cash is paid out, the slip showing the amount, to whom paid and followed by the words, Cash Paid Out. Charge slips are also placed in this drawer though in a separate compartment, these slips being filled out with the patient's name and amount, followed by the word, Charge.

At the end of the day, the total amount of the cash slips, less the bank deposit slips and the cash paid out slips must equal the cash on hand. These items should then be entered in the memorandum book. Every slip should have such an entry, and the daily balance should be kept at the foot of the sheet. At the end of the month these items are posted from the memorandum book to the ledger along with all stubs from the check book.

Once a month or oftener if necessary the charge slips should be taken from the drawer and entered in the ledger, which is subdivided into alphabetical order for this purpose. Should an account be paid before the slip or ticket had been posted, the ticket is marked, Paid, and filed, the amount showing on the memorandum sheet.

The ledger is balanced monthly, and cash on hand in the ledger must agree with cash on hand in the drawer. Bank balance in the ledger must agree with bank balance in the check book.

This system takes such a small amount of time as to be negligible and mistakes are very easily traced. Your income tax report loses its complications and practically resolves itself into a matter of copying as far as your business figures are concerned.

Of course the system outlined appeals only to the exclusive optometrist.

Any optometrist interested in installing this system may feel free to communicate with the writer on any points not entirely clear. He will be glad to furnish any additional data desired.

REFRACTIVE COUNSEL

Dr. R. M. Peckham, Optometrist, of 111 Bank Street, Waterbury, Conn., will answer in these columns questions regarding difficult refractive cases. Our readers are requested to send him full particulars of each case, which will be published along with the reader's initials only. These questions and answers will appear monthly. Also in this department Dr. Peckham would like to receive the accounts of unusual cases which have been satisfactorily handled, which will be published, if accepted, over the practitioner's name.

TWO CASES OF ESOPHORIA

The following two somewhat similar cases are of particular interest because the sufferers are optometrists. The one was lead into trouble by the use of minus (apex In, or base Out) prisms "in the position of rest," that is, supposedly, "correcting part of the manifest error." The other's trouble originated from too much "playing with fire," too many adduction tests, which induced myopia, then the use of minus lenses led into esophoria. Both have been relieved by following the guidance of the laws of the nervous system, placing their prisms in that position (bases In) that would inhibit convergence and innervate the abduction.

The first case is an esophore of 18 degrees. Refractive error, O. U. + 1.25 D. Sph. () + 0.25 D. Cyl. Axis 90. To this had been added for each eye a 6 degrees prism base Out. We quote further his own words: "I thought there was no living without them, and that was my honest opinion and my actual experience. However, I knew that there must be something done before long because I had an actual diplopia when minus my prisms. I had absolutely no abduction left. While considering a tenotomy, I was almost certain that there must be some other mechanical means of correcting the condition."

Impressed with the logic of using plus prisms (base In) as a means of inhibiting convergence, he "determined to put it to a test. The boys thought it a great joke that I was to discard my 12 degrees of minus prisms (base Out) and reverse the situation to base In. But I did discard the minus prisms, and made up a new left lens with 0.75 degree prism base In, mind you, this on top of a diplopia. Now, did it throw me into convulsions? Not a bit of it. There was no discomfort in actual pain, but I saw double. In spite of that I persevered for one week with a diplopia. On the eighth day it lessened and on the tenth day I had binocular single vision. Today, two weeks after the start, I have five degrees of abduction (remember I had none at the beginning) with twenty-five of adduction. I have changed the prisms to 1 degree prism base In over each eye, and have no discomfort with them. I can now wear my refractive correction without any prisms for hours at a time with perfect comfort."

"Do you think I can eliminate the esophoria entirely by this method? To what extent must I increase the plus prisms? Have accommodated these 2 degrees very nicely, should I increase by 0.50 degree steps?"

This optometrist is to be congratulated on the breadth of mind shown in his willingness to try something different from the teachings of the older text-books, and on the persistence with which he stuck to his experiment even in the face of a manifest diplopia. We fear we should have considerable difficulty in persuading a patient to do likewise.

It is doubtful if any advantage would be gained by increasing the plus prisms. We hesitate to make a prognosis, but venture the opinion that within a few months our friend will find he needs more plus for reading. For the relaxation of accommodation that will follow the relaxation of convergence, and the dissociation of the two functions that will doubtless ensue, will not only permit the prescription of more plus, but the need for that prescription will probably be felt.

The second case is an optometrist who was a favorite subject for "adduction tests" while attending optometric school, because of his immense amount of reserve adduction. As the result, a slight myopia was considerably increased, an esophoria established, with the final outcome that for years he has been unable to read more than a single sentence without great fatigue and pain.

A partial history of corrections worn

is illuminating. We give here the cylinders needed and the esophoria found at each test. Spheres, —1.00 D. to —2.00 D., of varying strengths were used with these cylinders. Full minus correction would give 20/XV vision, but these full corrections were intolerable, on account of the esophoria induced, and deductions that brought vision down to 20/C were necessary. Dates, amount of esophoria and cylinder strengths are given in columns.

Date	Esophoria	Cylinder	Axes
1916	13D.	—0.37	90
1917	13D.	—0.25	90
1918	6D.	—0.50	90
1920	4D.	—0.62	97
1922	4D.	—0.62	95
1924	5D.	—0.75	90
1925	6D.	—1.00	90 & 95

Note in particular the development of sectional accommodation, as exemplified in the constantly increasing astigmatism against the rule, and which is so typical of accommodative esophoria. Also, the torsions, as shown by the swinging of the cylinder axes, also common with esophoria. Both annoyances, sectional accommodation and shifting axes, are due to the efforts of the central nervous system to balance accommodative with convergence efforts, to inhibit the one while innervating the other.

In June, 1925, he was advised to try plus prisms for constant wear, with a bifocal addition for reading. The prescription being worn at that time read R. E., —1.00 D. Sph. () —1.00 D. Cyl. Axis 95; L. E., —2.25 D. Sph. () —1.00 D. Cyl. Axis 95; vision, 20/LXXX. The addition of 3 degree plus prism brought vision up to 20/XL.

Prescription given was R. E., —0.75 D. Sph. () —1.00 D. Cyl. Axis 95 () 1 degree prism base In; L. E., —2.00 D. Sph. () —1.00 D. Cyl. Axis 95 () 1 degree prism base In. Add for reading + 0.75 D. Sph. () 1 degree prism base In. This gave total plus prism for reading of 4 degrees, or 2 degrees to each eye. This gave a little discomfort at distance at first, mainly because of the apparently changed location of objects, especially in motor driving. But this discomfort soon passed away. There was still 6 degrees of esophoria.

In September the prescription was slightly changed, adding a 0.50 degree prism base In and deducting a 0.25 dioptre of sphere. This gave great comfort for about three months, when the old feeling of annoyance returned and a new examination was made in December

To our surprise, also to our pleasure, we found the esophoria had disappeared, a showing of accommodative orthophoria being given in the phoria test.

Further, to our surprise, and also to our pleasure, the sectional astigmatism that had been gradually increasing, had lessened. For distance the right eye accepted an —0.87 D. cylinder, the left eye still demanding the —1.00 D. cylinder. But at the reading point, which is always the crucial test, the right eye took a —0.37 D. cylinder and the left eye was reduced to a —0.50 D. cylinder. A few minutes relaxation brought about the desired change in the distance correction, and both cylinders for distance were reduced to —0.50 D.

In this case, the wearing of plus prisms has done away with the esophoria, reduced the amount of minus needed, relaxed the sectional accommodation so that the corneal error was fitted. We await further developments with considerable interest.

These two cases are splended examples of what can be done by inhibiting convergence with the use of plus prisms. It might be added, that the experience of the writer is that exercises with the Kratometer, prisms base In, will considerably reduce the time needed for effective relaxation.

BOOK NOTICES

New Books for review should be sent to Dr. E. O. Fjelstad, 209 Yeates Building, Minneapolis, Minnesota. Only Books of such nature as to be of interest to optometrists will be used in this department. Optometric and Ophthalmic publications that have been issued in the past and which are still procurable through their publishers will also be reviewed, from time to time, as space permits.

The Medical Follies. By Morris Fishbein, M.D. Boni & Liveright, 1925.

In a series of essays Dr. Fishbein discusses the healing cults or rather the various forms of what he terms quackery. The idea back of the book is to show the "inside," so to speak, to the layman, of the cults playing on the borderline of medicine.

The essays are devoted to Osteopathy, Chiropractic, Health Legislation, Birth Control, Rejuvenation, Antivivisection and Physical Culture.

It may immensely please some optometrists to find that optometry is not mentioned, but an analysis would show that the cults of "quackery" to which Fishbein gives his attention seem to be founded on no true scientific fact and flourish by "feeding fat upon the ills, real or imaginary, of credulous mankind" as one reviewer ably stated, and, we may add, that the founders and disciples of these cults profit much from a knowledge of the gullibility of the public. But, to get back to optometry and why it has no place in this book, we all know that optometry is founded on true scientific facts and is not trying to enter medicine.

Fishbein becomes amusing at times and especially when he describes the advertisements we all have seen, at times, of the "big muscle boys." He tells of their literature and of how each describe themselves as the most perfect man, etc. Then again it is amusing when he says that chiropractic is a way of entering medicine through the cellar and osteopathy by the back door. Fishbein classifies chiropractic as the "first three weeks of osteopathy."

Optometry is mentioned but twice and that when quoting from a case in California where an osteopath felt he could practice optometry on account of the medical exemption clause in the optometry law.

All in all, the book was most interesting. E. O. F.

ABSTRACT DEPARTMENT

Optometric and ophthalmic Journal articles and reprints to be abstracted should be sent to Dr. G. L. DuPlessis, 209 Yeates Building, Minneapolis, Minnesota. Only papers of interest to optometrists will be reviewed in this department.

Physiologic Hyperopia and Distance Presbyopia. Bard, L. Archives d'Ophthalmologie (French), p. 193, 1923.

As hyperopia is by far the most common form of ametropia, Bard believes it should be considered as anatomically normal. Our conception of emmetropia as a normal condition rests on mathematical and not physiological facts. The author estimates that accommodation in a negative form comes into play in distance vision as well as in a positive form in near vision. Bard having noticed that an improvement in middle distances followed the application of convex lenses believes that the explanation lies in the above theory.

The weakening of accommodation would first manifest itself at near at about 40 years of age, then at middle distances around 60 and lastly for extreme distances, the eye then being hyperopic and being corrected by a plus 1.50. This presbyopic hyperopia distinguishes itself from the ordinary hyperopia by the fact that with correction on, convex lenses cannot be added as is possible to a certain extent with the accommodating hyperope.

G. L. DuP.

THE AMERICAN JOURNAL OF OPTOMETRY

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Original papers, scientific communications and correspondence should be addressed to the Editor. Books for review should be sent to Dr. E. O. Fjelstad. Clinical Reports and Society Proceedings should be sent to Dr. J. I. Kurtz. Practical Notes and Current Refractive Topics should be addressed to Dr. R. M. Peckham, Waterbury, Conn.

Annual Subscription Two Dollars in Advance. Single Copies 20c.

Copy of advertisements must be sent to Dr. Jack I. Kurtz by the tenth of the month preceding their appearance. Subscriptions, applications for single copies, communications with reference to advertising or other business, should be addressed to the Business Manager,

DR. JACK I. KURTZ, Room 209 Yeates Building, Minneapolis, Minnesota.

The Journal has no objection to the reprinting by other magazines of any of its articles, provided such reprints are properly credited to the American Journal of Optometry.

THE PROBLEM OF THE YOUNG PRACTITIONER

A vital problem before all optometrists is that of the young man just coming into practice. Many have given a great deal of thought to this problem, but as yet no solution has been found. We are not offering a solution at this time, but are taking this occasion to bring before the practicing optometrists this problem, which they might be aware of, but have not considered.

Before entering into the study of optometry the young high school graduate is told by older men that there is a wonderful opportunity in this line of endeavor, but possibly caution them that the road will be at times hard to follow. At the college or university in which the student gets his training the underlying thought is that of professionalism, upstairs office, proper refraction fees, and such. With that thought in mind he receives his diploma and his certificate permitting him to practice, but what does he find? The professional optometrists with upstairs offices are unable to employ him, not through any fault of either the optometrist or the student, but because of the lack of sufficient income and practice to permit or necessitate such a procedure. Now, what remains for the young optometrist is either a practice for himself, or a connection with a commercial establishment.

The problem of opening an office for himself becomes a simple matter if the financial backing is great enough, but a great many men do not have the money available or access to sufficient funds to buy equipment and to carry on for the time necessary for establishing a practice. Not so many years ago it was a relatively easy matter to get started, as the outlay for equipment was small and the supply houses would be glad to co-operate. These houses today, however, due to the higher prices of equipment, require a rather large amount as a down payment and the balance in a rather short time, for which we cannot blame them, as they must have money to do business.

For the man with a small amount of funds, the problem of getting into the practice of optometry becomes now a matter of connecting up with a commercial establishment, and high-class establishments of this kind are few. This being true, the bursting of the bubble is complete and many young

optometrists, instead of being able to raise the practice of optometry, as the older men wish them to do, find that they are unable to do so, thus being forced into the cut-rate establishments.

A solution of this problem, if one exists, will be welcomed by the professional element in the profession, as it is one of the most vital problems confronting optometry today.

E. O. F.

DENOUNCING THE SALE OF GLAZED GOODS

The movement to curb the indiscriminate sale of glazed goods marks the dawning of a new era in the optical world, which will be found to have a beneficial effect on the profession of optometry, the optical trade and the general public. This movement is developing momentum and is being looked upon with favor and interest both by optometrists and ophthalmologists.

It is particularly pleasing to note that the optical houses which are taking an active part in this movement and announcing a "definite stand" on this question are doing it from a purely voluntary standpoint. They are not forced to take this stand on account of any pressure which has been brought to bear upon them by organized optometry or ophthalmology.

The Riggs Optical Company was the first to our knowledge, to adopt the new policy of limiting the sale of glazed goods to refractionists only. This move has received a very hearty welcome from both refractionists and the optometric press. Optometrists the country over proclaimed this move as the "beginning of the end of the glazed goods evil." One cannot help but hear the favorable comment this action is receiving not only from individual practitioners but from groups gathered at state conventions as well.

As an example we may mention the case of the representative of the Twin City Optical Company, who while attending the convention of the Minnesota State Association of Optometrists heard much of this talk. He was so moved by the prevailing sentiment that within twenty-four hours after the banquet a decision was made, that his company would join forces with other similar houses to help eradicate the glazed goods evil and announced that their new policy, from this date on, will be *"Ophthalmic Products to Ophthalmic Men."—More Power to Them!*

T. O. B.

In Memorium

John Jacob Bausch
1830 1926

It is with deep regret that we record the death of Mr. John Jacob Bausch. Mr. Bausch was one of the founders of the house of Bausch and Lomb and for many many years has been actively engaged as the head of this organization. His many friends will miss him greatly and the entire optical world will feel, in many ways, the passing of this great builder. Mr. Bausch died February 14th, 1926.

REPORTS AND ANNOUNCEMENTS OF SOCIETIES

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Reports of Society Proceedings in Iowa should be sent to Dr. D. A. Kinney, Charles City; in Maryland to Dr. J. F. Andreae, Baltimore; in Minnesota to Dr. H. B. Kollofski, St. Paul; in Nebraska to Dr. C. A. Perrigo, Freemont; in North Dakota to Dr. A. S. Anderson, Williston, and in Oklahoma to Dr. E. B. Alexander, Duncan.

THE MINNESOTA CONVENTION

From both an educational and a "get-together" standpoint, the twenty-sixth annual convention of the Minnesota Association, was a splendid success. Dr. Arthur Hoare of Los Angeles, Clinician for the A. O. A. lead the program, making several interesting talks and going into great detail regarding the necessity for making each refraction complete. Dr. T. G. Atkinson, of Chicago spoke at length on the relation of optometry and the other sciences, pointing out the need for broadening the outlook on the part of the average practitioner. Col. Orvel Johnson of Oklahoma City, attorney for the A. O. A., spoke on the newer phases of legislative thought, particularly stressing the idea that the boards of optometry were the representatives of the state and not of optometry only. Dr. W. W. Chamberlain of Houston, Texas, compared the Minnesota and Texas practitioners, their work, their ideals and their laws. More than one hundred optometrists sat through the two day session listening to these men, and seemed well repaid, the men frequently commenting on the data presented.

Two short business sessions were held. At the first Dr. A. H. Nordland of Minneapolis was elected president, with the following men on his council: Dr. G. C. Jensen, First Vice President; Dr. J. Frank, Second Vice President; Dr. A. J. Large, Third Vice President; Dr. H. Watzke, Fourth Vice President; Dr. J. I. Kurtz, Secretary, and Dr. L. T. Arduser, Treasurer. The secretaries' report showed the society doing nicely with a balance of $650.00 in the bank. Several resolutions were passed among which were three of interest. The first, a resolution endorsing the work of our National Secretary, Dr. E. Kiekenapp, and the second, one thanking the A. O. A. for their assistance in sending Col. Orvel Johnson to the meeting and expressing the society's pleasure in having him with us. The third, thanking the educational department of the A. O. A. for making Dr. Hoare clinic possible. All three resolutions were presented by Dr. Nordland.

The sessions were closed with a banquet. Dr. Kiekenapp presided, and Mr. Larry Hodgens of St. Paul, Dr. Hoare and Col. Johnson all spoke. The planning of the convention fell to Dr. F. Zimmerman of Minneapolis who made all arrangements and who seemed ever anxious to please the men attending, who all agreed, that the job was well done.

BULLETIN BY PRESIDENT NORDLAND

Having recently completed our 26th Annual Convention in Minnesota marked by an unusually large attendance of high class optometrists, and an enthusiastic interest in the splendid educational program, I believe this a fitting time to set forth a few facts and suggestions that may further such constructive interests for the betterment of optometry and ourselves.

Optometry's many problems can only be solved by an active unselfish effort on the part of the large majority of optometrists to place optometry first and foremost by rendering a conscientious scientific optical service to the patient and a wholesome co-operation to essential organization or society problems. Because many people are still unfamiliar with the full meaning of optometry, it is but natural that our services act as an explanation or definition of its meaning to them, and we must expect to receive recognition for optometry and ourselves only in the same measure as our services are rendered. Let us not forget our patients or prospects are not interested in us as individuals. It is solely in our services. It is significant to state here that the location of your office or the question of a title, or what not, is of minor importance if the patient's interests are considered first as they should be at all times. We all have our sphere in which we can properly and profitably be of a true service, if we will but bear in mind the above principle.

The need for a strong society or organized effort in optometry is particularly emphasized by circumstances at this time. We have need for the accomplishment of many things which will aid materially in the progress of optometry and can only be successfully directed through organized effort. Briefly stated, we should have in our State University a proper optometric course; postgraduate work for registered optometrists; one or more state optometric clinics fully equipped for educational and practical use—surveys should be arranged for in the various fields, such as—motorists, schools, industries, employees in the fire, police and postal service. In this connection, it can be safely stated that our publicity problem would be effectively solved if we are successful in any one of the above suggestions. It may be advisable to further improve our optometry law at the next session of the legislature by restricting the sale of glasses as merchandise and the replacement of lenses to those legally quali-

fied to prescribe glasses. Here it might be well to point out that if we are to derive the utmost benefit from our present law it is up to every individual optometrist to co-operate with the State Board of Examiners to the fullest extent. We should also work for a standardization in the minimum requirements of a proper eyesight examination.

I have only attempted to cite a few of the many things which the optometrists can collectively accomplish with a reasonable effort, if each individual optometrist will aim to do his or her full duty.

Your officers for the coming year are earnestly going to try to carry out a constructive program for the betterment of optometry and the optometrists. The success we have will depend to a large extent on the co-operation we receive from the majority of all optometrists. We sincerely hope that you will offer any suggestions or criticisms for the good of optometry this coming year to the Board of Directors of your State Association, and you may be certain that we will act upon same to the best of our ability.

Report of the Nineteenth Annual Convention of Optometrists in Nebraska

On the twenty-eighth and twenty-ninth of January the Nebraska State Association of Optometrists held their nineteenth annual convention at the Hotel Rome in Omaha. There was quite a large attendance from all parts of the State and much interest shown by all those present.

The administration during the past year under the direction of Dr. L. C. Hewitt as president and Dr. Fred Gonder as secretary and treasurer was a very efficient one. Through the co-operation of the presiding officers and the members of the Association an organization has been effected by which the attitude of prospective legislators toward our new Optometry Bill which will come up for consideration during the next legislature will be carefully investigated before the election takes place. In this way it is hoped that we will be able to place on the statute books of Nebraska an Optometry Law which will be mutually beneficial to the Optometrists of the State and the public in general.

The sentiment of the members of the Association in attendance at the convention was so highly favorable toward the work that has been done during the past year by the present officers that the rules of order were suspended and the same officers installed by unanimous consent for the next year.

The Association was honored during the first day of the session by the presence of our National President, Dr. W. F. Kimball, St. Joseph, Missouri. The presence of Dr. Kimball at our convention has seemingly brought us into closer relationship with the National Association and no doubt the personal contact will redound ultimately to the benefit of both our State and National Associations.

Dr. A. F. Hoare of Los Angeles was Clinician in charge and gave extended addresses both on Thursday and Friday afternoons supplemented by a short talk on Dynamic Skiametry Thursday evening. Dr. Hoare is a very enthusiastic and sincere speaker and shows the results of deep study and research in Optometric methods.

On Thursday evening at six-thirty a sumptuous banquet was served to all members of the Association followed immediately with dancing. After the dance the members of the Association repaired to the various theatres for further entertainment. On the whole the convention was very satisfactory and no doubt will presage much good for the Optometrical profession in Nebraska for the coming year. C. A. Perrigo, Opt., D.

THE A. O. A. CONVENTION

With San Francisco as the city selected by the American Optometric Association for their twenty-ninth annual national educatoinal congress for 1926, the General Arrangements Committee, composed of leading optometrists in all parts of the United States, have united to make this convention the largest and most successful ever staged, and they are confident that they will double the attendance that was present at the last A. O. A. National Educational Congress in San Francisco, held in 1915.

Leaders of the San Francisco Chamber of Commerce, the Californians, Inc., and the San Francisco Convention and Tourist League, along with the civic and social organizations have all pledged their utmost assistance to uphold the tradition that San Francisco is the "City That Knows How" for the A. O. A. convention delegates.

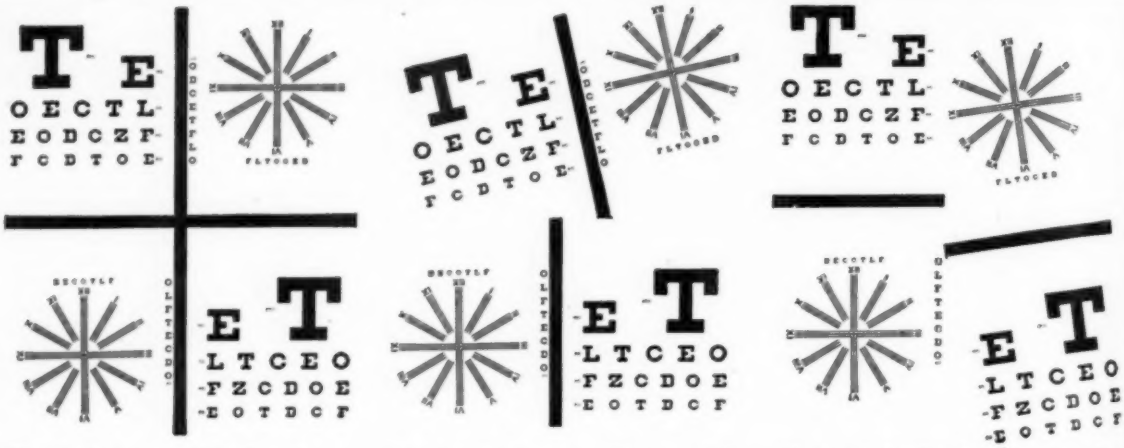
The A. O. A. National Educational Congress opens June 2, and will continue until July 2, inclusive, and will be held in the Civic Auditorium, the largest structure of its kind west of the Rockies.

SAN FRANCISCO ASSOCIATION OF OPTOMETRY

Election of officers of the San Francisco Association of Optometry was held on February 20th, at a meeting in California Hall, and Dr. William G. Lindsay, was reelected president. Other officers elected were: Dr. Raymond Bangle, Vice President and Chairman of the department of education; Dr. Robert Atkinson, Second Vice President and Chairman of the department of organization and legislation; Dr. Clyde Hall, Third Vice President and Chairman of the constitution of by-laws; Dr. Frederick Havell, Fourth Vice President and Director of the department of vigilance; Dr. Joseph G. Mayerle, Secretary, and Dr. Max L. Shirpser, Treasurer.

Dr. John Forsythe of Long Beach, President of the State Board of Optometry; Dr. T. A. Brombach, Secretary, and Dr. G. J. Deane of Merced, a member of the State Board, addressed the gathering.

Dr. Charles B. Hobrecht, chairman of the general arrangements committee for the twenty-ninth national educational congress of the American Optometrical Association, along with Dr. Deane, spoke on the development being made for plans for the convention which will be held by the national body in San Francisco from June 28 to July 2, in the Civic Auditorium.



You get a case that has been the rounds of "all the good specialists in the city"; no glasses have been found that give relief. You seat the patient before a chart like the above and bring the Hemisensory Binoculometer into position: promptly the patient reports conditions as depicted above. You at once recognize it to be esophoria, associated with a great cyclophoria. It is unmistakable, all doubt is thrown to the four winds.

You now turn the instrument to make vertical test; the cyclophoria is again shown, associated with right hyperphoria. Ah! plus lenses **removed** the esophoria but the cyclophoria and the hyperphoria remained unchanged. What should you do? Can you give this patient comfort?

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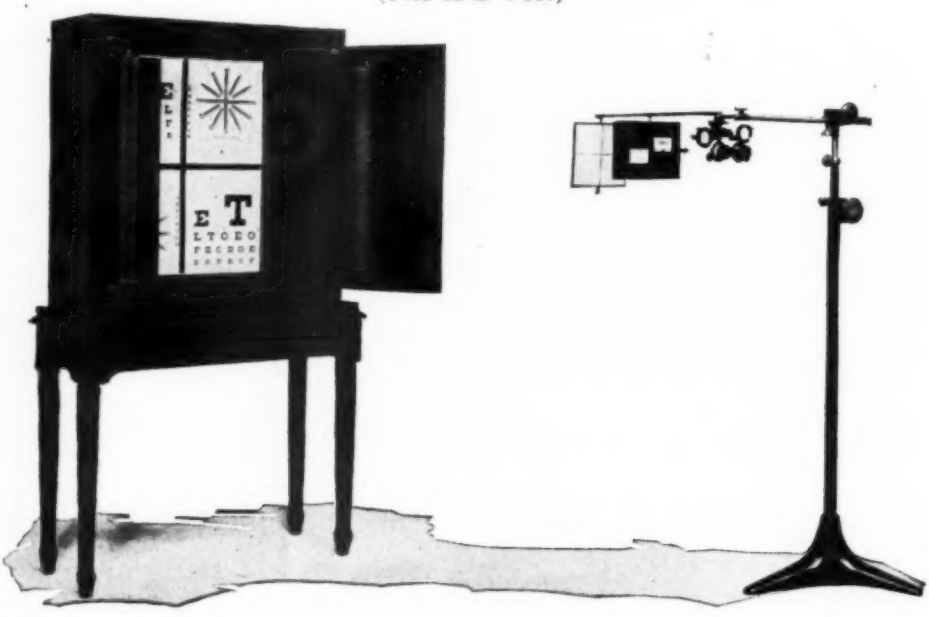

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